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AMPUTATION AT THE HIP-JOINT, COMPLICATED BY COMPLETE ANKYLOSIS. DEATH IN TWENTY-FIVE HOURS.

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WILLIAM BERGIN, 36 years of age, born in Baltimore, of Irish parentage, and of good moral character, received an injury in the left hip, when about ten years old, by catching the foot of that side, while on horseback, in shutting a gate through which he was passing. This was of so grave a character that he was confined two years. A short time after this, in driving a cart containing loose drills for blasting rock, the horse became frightened at their rattling, ran away, threw him out, and he was picked up, six hours afterwards, in an insensible condition. He yet sustained a third hurt in the hip, by being thrown down a stairway when at school.

The late Prof. Porter treated this case five years, and the patient wore a seton over the inflamed hip-joint for a long period. Dr. Carow was also his surgeon, as were Drs. Briggs and Buist more recently. In the meantime the thigh-bone, below the trochanters, became carious, and the joint above permanently ankylosed. Altogether, our patient had been a sufferer for eighteen years—half his life,—and, latterly, several pieces of bone were discharged through the sinuses leading into the cancellated structure of the femur.

When invited to see him, last December, by Dr. Buist, there were several issues on the outer and internal upper surface of the thigh, discharging pus, and cicatrices of former incisions and ulcers. During this month, assisted by the last named gentleman and Dr. Briggs, the diseased bone was exposed again, by the knife, when it was found extensively carious, one opening admitting the tip of the finger; and amputation at the hip-joint proposed, as had been insisted upon some time previous to this examination, by Dr. Briggs.

Our patient, after considering the proposition of about one chance in four to save his life by amputation, declared he would rather die than pass another summer of worse than uselessness to himself and a burden to his friends, finally decided for the operation. This was performed on the 4th of March, at 11 o'clock A. M., assisted by Drs. Buist, Briggs, Buchanan, Dow of Alabama, and Drs. Compton, Peyton, Noel, Bailey, and Summers, of this city.

Dupuytren's compressor was tried upon the abdominal aorta, but did not answer well, and Dr. Briggs prevented hemorrhage by pressure on the femoral artery, over the pubis. A long anterior flap was made by transfixion, after the integuments had been dissected up with a scalpel; ligatures were applied to the bleeding vessels, then the shorter flap cut posteriorly from within out, and the femur sawed at the trochanters. Several large sinuses were laid open, the soft tissues found much altered, and the muscular structure quite lardaceous. With chisel, gouge, and hammer, the head of this bone was now excavated from the acetabulum. No capsular or round ligament was recognized. The ankylosis was perfect, with scarce a trace of cartilage or line of demarkation between the two opposing surfaces, so completely had they coalesced. Nevertheless, in using the gouge, pus issued from the caput femoris.

The operation consumed about forty minutes, and but little blood was lost—probably four ounces, as estimated by Dr. Buist. The great distress after this, and which, unfortunately, continued to his death, was nausea, and vomiting of every-

thing the patient would swallow. Ice, iced champagne, brandy, lime-water with milk, mustard-plasters, &c., were all tried, in vain. Twenty grains of calomel, taken half an hour before he died, alone remained, though he took nothing after it but crushed ice.

Reaction came on slowly, but, after two hours, he revived, slept well at intervals during the night, and conversed cheerfully up to 5 o'clock the next morning. He took laudanum several times, which was vomited very speedily, and only one-fourth of a grain of morphine was hypodermically inserted in two (one-eighth) portions. Up to this hour I had remained with the patient.

Returning at 8 o'clock, I found him sinking, and becoming unconscious. Stimulating and nutritive enemata were vigorously employed, and mustard was again resorted to on the surface, but to no purpose, the patient dying from exhaustion about one o'clock, twenty-five hours after the operation.

This may be the first case wherein amputation was performed, complicated by ankylosis in the joint; notwithstanding which, I was somewhat surprised at the ease with which it was done. As far as I have examined the subject, none similar has been found, but my means for research are limited. I had never seen it performed before, for I was in Europe in 1859, when my late colleague, Dr. Buchanan, operated in the hospital of Nashville, on a lad of fourteen years, and so successfully, too, that the patient is now serving out his second term in the Penitentiary for his rascality. Mine is probably the second coxo-femoral disarticulation made in Tennessee, excepting those performed during the war, concerning which we have failed to obtain satisfactory details.

Within the past quarter of a century, operations at the hip have been invested with increased interest, and a new starting point created for it, as it were, by the six recent disastrous wars, viz., of Schleswig-Holstein, the Crimean, the Italian, the war of the American States, the Prussio-Austrian, and the

Franco-Prussian. This has emphatically been the period of terrible gunshot injuries, inflicted, too, by new projectiles of fearful momentum, so that a greater number of these amputations and resections have been performed during the last twenty years than in the previous history of the world. A few months of repose now, with the benign influences of peace, would no doubt result in much good to the profession, and consequently to humanity, by a collection and analysis of the numerous facts connected with surgery, educed by late political events. It is to military surgeons that we look for the most reliable reports, as they alone have access to those which are official; and, fortunately for the profession, the activity and efficiency displayed in the Surgeon General's office, guarantees that the work will be well done. Statistics, carefully prepared, can alone settle the several points bearing on the interference or non-interference, in so grave a question as the quartering of a man to save his life.

Amputation at the hip-joint, or coxo-femoral disarticulation, systematized and made practical, is a modern operation, and has very recently been made safer, by the employment of anæsthetics and the use of the abdominal tourniquet; its great fatality being due to shock and loss of blood.

In a brief historical notice of this formidable operation, in my work on Remarkable Cases in Surgery, published in 1857, it was stated that Morand first suggested this amputation in 1743; Ravaton actually proposed to perform it soon after, but was overruled in consultation: and Lacroix, of Orleans, France, in 1748, first removed the thigh, at the hip, from a boy of thirteen or fourteen years, laboring under gangrene from ergotism, by dividing, with scissors, the round ligament and sciatic nerve on one side, and the other with the saw, just below the trochanters—the patient living fifteen days. But in this case, as in the one which occurred to Perrault, of St. Marie, Tourraine, in 1773, in which a man had his thigh crushed between the pole of a carriage and a wall, followed by inflammation and sloughing nearly up to the pelvis, these surgeons, in their operations, did little else than cut through mortified

tissue. In the latter instance, the patient lived for years, and Velpeau, in 1815, conversed with his son about the father's case. These operations, however, as has been properly remarked, only simulated that now considered amputation at the hip-joint, and it is not, therefore, strictly or scientifically true to assert that this latter instance was the first successful one of the kind.

The first regular coxo-femoral disarticulation was probably made by Kerr, of Northampton, England, in 1774, and was for hip-joint disease, or coxalgia, on a little consumptive girl, who lived to the eighteenth day after it. This, or a similar operation, was condemned by the celebrated Percival Pott, at the time, for the acetabulum and os innominatum were found carious to a considerable extent; but, nevertheless, it was this very case which established the important fact that death does not necessarily or promptly follow its performance; and moreover, in less than three-quarters of a century, this identical operation, and for the very same disease, was performed in our own country successfully.

As is now well known, Dr. Washington Duffy, of Philadelphia, Pa., in 1840, amputated at the hip-joint in a colored girl then six years old, who, when grown to womanhood, was safely delivered of a child, in the Blockley Almshouse of that city, in 1857. It is expressly stated, too, that the hip-bone was involved in the affection.

In military surgery, Baron Larrey (senior) became the active advocate for this operation at the close of the last and the beginning of the present centuries. He himself was the first to perform it, in 1793; did it several times, and had a success in 1812, at the battle of Mozaish. Brownrigg, of the British Army, is credited with the first successful case, in 1812, in a patient wounded the year before, in Spain; then came Larrey's case, the latter part of the same year; and Mr. Guthrie's, at Waterloo, in 1815, on a French captive, upon whom he operated "soon after the receipt of the injury." This is his own language; yet, as is now believed, he did not operate until the

18th, three days after that battle; it is not therefore considered a primary amputation.

In civil practice, it may be that Dr. Walter Brashear, of Bardstown, Kentucky, in 1806, had the first success in amputation at the hip.

The propriety of adding an *intermediate* period between the primary and secondary—that is, putting all operations performed during active inflammation in a distinct category, first proposed by army surgeons, has been made more obvious by the coxo-femoral disarticulations; for while we may operate immediately with a fair prospect of success for almost any injury done the extremities, at any other point, experience has already taught us that in those involving the hip-joint, temporization gives the best result. Still this may be carried too far, and in my case, the delay was probably so great as to have aggravated the serious complication with bony ankylosis. It is undoubtedly, too, to procrastination, as well as the preparation of the system by the previous operation in the continuity of the thigh, that *re*-amputation at the hip has been comparatively so successful.

It will be seen from this brief historical notice of amputation at the coxo-femoral articulation, and by what now follows, that our own countrymen have done something to establish it as a regular operation in surgery.

Dr. Brashear, of Kentucky, was probably the first to succeed with it in civil practice; it may be his case was the very first successful one under any circumstances.

Dr. Duffy, of Pennsylvania, was certainly the first who succeeded with it in coxalgia.

Others have succeeded by exsection of the head of the thigh bone.

Mr. Erichsen asserts, in his excellent work on the Science and Art of Surgery, edition of 1869, that previous to our late war, there was no instance of recovery under primary coxo-femoral disarticulation; and, as late as 1861, Baron Larrey (junior) and M. Legouest declared that there was not an authenticated case of successful primary amputation at the hip

recorded in military surgery. Not one of those operated on during the Schleswig-Holstein, Crimean, or Italian wars, whether by German, English, French, Italian, or Russian surgeon, survived an immediate coxo-femoral disarticulation; but during the war between the States there were three instances of recovery after primary amputation; viz., by Dr. Compton, of Holly Springs, Mississippi, who operated within an hour after his patient was shot; Dr. Gilmore, now of Mobile, Alabama, in three hours; and Dr. Shippen, of Philadelphia, five hours after the wound was received. Two of these three most remarkable cases, and the first of the kind ever reported, were furnished by me, in 1867, to the office of the Surgeon General, U. S. Army.

The late Dr. Buchanan saved the first patient operated on in Tennessee.

The first three hip-joint amputations made in Philadelphia by Drs. Duffy, Pancoast, and Gross, were successful; of the first nine cases, seven were successes, the two fatal ones occuring to the same operator; and of the eleven operations altogether performed in that city, seven recovered. The distinguished professors of anatomy and surgery, of the Jefferson Medical College, have each saved their two patients, being a success unprecedented.

Mr. Lister, Professor of Surgery in Edinburgh, acknowledges, in Holmes's last edition, that he received his idea of the abdominal tourniquet from an American author.

Lastly, the case now reported to this Society, may be the first operation complicated by bony ankylosis.

This is what Americans have done in the hip-joint amputation.